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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/914,244	08/19/1997	OLIVIER LEGENDRE	022701627	8181

21839 7590 10/07/2003

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/914,244

Applicant(s)

LEGENDRE ET AL.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/501,872.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Reopening of Prosecution

In view of the remand by the Board of Patent Appeals and Interferences on March 26, 2003, prosecution is hereby reopened.

Specification

The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

The attempt to incorporate subject matter into this application by reference to French Patent literature on page 6, lines 9-25 is improper because the reference is to a foreign patent or application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 7, and 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodboy (4,364,858).

The Goodboy reference discloses a Claus catalyst in the form of activated alumina containing sodium oxide in an amount preferably between 0.1 and 2.5 wt% (1000 to 25000 ppm). It is desirable for the catalyst to have a surface area greater than 300 m²/g. The catalyst is in the form of agglomerated particles (i.e., beads), the size of which can be adapted to a particular situation (i.e., fixed bed, mobile bed, or fluid bed). The Goodboy reference clearly

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discloses a Claus reaction which necessarily results in the removal of sulfur compounds from gases. Goodboy also discloses that hydrolysis of organic sulfur compounds occurs. (See col. 3, line 54 through col. 7, line 4.)

The Goodboy reference does not disclose the claimed range for the effective amount of sodium or the claimed surface area range with sufficient specificity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the catalyst and process of Goodboy by utilizing sodium amounts and surface areas within the claimed ranges because the sodium oxide amounts and surface areas disclosed by Goodboy encompass the claimed ranges and therefore using any amount of sodium within the disclosed range and any surface area with the disclosed range including values including values within the claimed ranges would be expected to produce an effective catalyst.

Regarding applicants' assertion that the catalyst provides unexpected results, the examiner argues that the data provide in the Nedež declaration does not appear to be commensurate in scope with the claimed invention. For example, claim 1 does not include many of the catalyst characteristics utilized in the declaration. Therefore, it cannot be determined if the any unexpected results are due to the sodium amounts or are due to other characteristics.

Claims 4-6, 8, 9, 22, and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Goodboy (4,364,858) in view of Dupin et al. (5,244,648).

As discussed above, the Goodboy reference does not disclose that the catalyst further comprises the components in claims 4-6, does not disclose the bead sizes of claims 8, 9, and 22, and does not disclose the pore volume as claimed in claim 23.

The Dupin reference discloses alumina-based catalysts that may be used in Claus processes. The alumina agglomerates may be formed using cellulose, charcoal or starches. They may also contain other components such as silica or alkaline earth metals. The agglomerates have a volume of pores with a diameter greater than 10000Å (1 µm) of greater than 0.1 cm³/g (>10 ml/100g). The volume of pores with diameters between 1000Å and 10000Å (0.1 µm and 1 µm) is between 0.10 and 0.15 cm³/g (10-15 ml/100g). This disclosure results in pore volumes that overlap those claimed in claim 23. (See col. 2, line 60 through col. 9, line 8.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the catalyst of Goodboy by forming the catalyst with the components disclosed by Dupin because such components are pore forming agents and their use results in a porous catalyst.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the catalyst of Goodboy by including silica or alkaline earth metals as suggested by Dupin because the alumina will be heat stabilized.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the catalyst of Goodboy by having the pore volume within the ranges claimed because Dupin discloses that this pore volume results in an effective catalyst.

Regarding the claimed bead diameters, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the catalyst of Goodboy by utilizing a catalyst having the claimed bead sizes because Goodboy discloses that the size may be adjusted depending on the particular situation.

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Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodboy (4,364,858) in view of Flytzani-Stephanopoulos et al. (5,242,673).

As discussed above, the Goodboy reference does not disclose that the alumina catalyst is deposited on a support substrate.

The Flytzani-Stephanopoulos reference discloses that sulfur recovery catalysts that contain aluminum oxide may be deposited on supports. (See col. 4, line 63 through col. 5, line 34.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the catalyst of Goodboy by supporting the catalyst as suggested by Flytzani-Stephanopoulos because a supported catalyst is equated to granules or pellets and therefore would be expected to be effective in a sulfur recovery process.

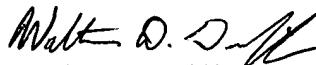
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

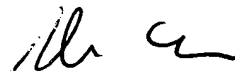
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
September 11, 2003



Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700